

IN THE CLAIMS

1. (Currently amended) A method for predicting the PFA value of a sunscreen composition comprising the steps of:

determining *in vivo* SPF;

determining *in vitro* SPF based on an absorbance spectrum in a UV region for said sunscreen composition; and

calculating the PFA-PPD *in vitro* based on an integration area of a UVA1 region.

2. (Original) The method of claim 1, further comprising, after the step of determining *in vitro* SPF, the step of normalizing said absorbance spectrum.

3. (Original) The method of claim 1, wherein said step of determining *in vitro* SPF is conducted on a substrate selected from the group consisting of surgical tape, polyvinyl chloride film, and synthetic skin substitute material.

4. (Original) The method of claim 1, wherein said step of determining *in vitro* SPF is conducted on a substrate formed of a synthetic skin substitute material.

5. (Original) The method of claim 1, wherein said step of determining *in vitro* SPF comprises a sunscreen composition applied to a substrate in an application dose of 2 mg/cm².

6. (Original) The method of claim 3, wherein said step of determining *in vitro* SPF comprises a sunscreen composition applied to said substrate in an application dose of 2 mg/cm².

7. (Original) The method of claim 4, wherein said step of determining *in vitro* SPF comprises a sunscreen composition applied to said substrate in an application dose of 2 mg/cm².

8. (New) The method of claim 1, wherein said PFA-PPD *in vitro* is calculated using an equation:

$$\text{PFA - PPD in vitro} = \frac{\int_{340\text{nm}}^{400\text{nm}} E(\lambda) \cdot S(\lambda) d\lambda}{\int_{340\text{nm}}^{400\text{nm}} E(\lambda) \cdot S(\lambda) / 10^{[A(\lambda)C]} d\lambda}$$

wherein $E(\lambda)$ is an irradiance at a wavelength λ of a light spectrum used, $S(\lambda)$ is an effectiveness of a biological endpoint at a wavelength λ , $A(\lambda)$ is an absorbance, and C is a constant factor for an adjustment of the light spectrum.

9. (New) The method of claim 2, wherein said absorbance spectrum is normalized using an equation:

$$\text{SPF in vivo} = \text{SPF in vitro} = \frac{\int_{290\text{nm}}^{400\text{nm}} E(\lambda) \cdot S(\lambda)}{\int_{290\text{nm}}^{400\text{nm}} E(\lambda) \cdot S(\lambda) / 10^{[A(\lambda)C]}}$$

wherein $E(\lambda)$ is an irradiance at a wavelength λ of a light spectrum used, $S(\lambda)$ is an effectiveness of a biological endpoint at a wavelength λ , $A(\lambda)$ is an absorbance, and C is a constant factor for an adjustment of the light spectrum.